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ABSTRACT

Although many researchers have identified meaningful learning as the proper aim of education, the realization of that aim and the theoretical understanding of the prerequisites for meaningful learning in the school setting are far from complete. By integrating ideas from theories of meaningful learning with ideas from theories of purposeful, goal-directed action in psychology and socialization in sociology, a common concept of meaning and meaningfulness could be developed. This integration could facilitate the analysis of the interaction of cognitive, motivational, emotional, and social elements in learning situations. Whether a student experiences his school curriculum as being personally significant and meaningful depends on both affective and cognitive elements. Cognitive meaningfulness can be further divided into logical and psychological meaningfulness. Behind the psychological meaningfulness of studying and learning there are structures of relevance. A hierarchical organization of relevance includes the student's experienced purpose of life interacting with his experienced meaningfulness of attending school, studying, and learning. In addition to these structures, there are social and intellectual dimensions of relevance. Four types of orientation can be identified, based on quality of sense of control and the kind of relevance experienced. These are task, social dependence, ego-related, and noncommitment orientations. The cyclical processes of learning situations produce cumulative experiences which lead to the development of individuals' motives, conceptions, and behavioral tendencies in different directions. (NRB)

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MEANINGFULNESS OF STUDYING AND LEARNING AS A FRAMEWORK FOR ANALYZING INTELLECTUAL DEVELOPMENT AND LEARNING DIFFICULTIES

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"We occasionally have Ph.D. candidates who have been socialized or trained over the years to make acceptable responses on tests and yet cannot think up a research proposal (let alone commit themselves to it) to save their lives"
(Carl Rogers 1957, 367)

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Meaningfulness of studying and learning as a framework for analyzing intellectual development and learning difficulties

1. Introduction and backround

Rogers (1967) has described and contrasted with each other, as possible aims for education, two types of learning which lead to two sets of assumptions upon which the educational process can be based. The type described as significant, experiential and meaningful is, according to him, more suitable for today's world. The other type appears to him to be primarily cognitive, primarily the fixing of certain associations. Rogers says thet the essence of the former type of learning is meaning. There are also many other researchers who have made the same kind of differentiation between types of learning and emphasized the active nature of meaningful learning leading to a more real and deeper understanding of the subject matter to be learned at school. Ausubel calls the opposite type rote learning and thinks that both discovery and reception learning which form the other dimension of school learning can lead either to meaningful or to rote learning depending on the conditions of the learning situation and the intentions of the learner (Ausubel & Robinson 1969, 43). Already Dewey had stressed as a part of his ideas for progressive pedagogy that learning at school should be made more meaningful by connecting it with children's life experiences through cooperative, socially significant action. He criticized the fact that too often education at school emphasizes the passive role of the learners as listeners, who must express in their action the aims and wishes of others like slaves in ancient Greece according to Plato (Dewey 1915). Also Wertheimer (1945) was concerned about whether students at school learn solutions to problems based on real, insightful understanding and not only on blindly or inappropriately applied old rules. This emphasis of the gestalt school on understanding, on perceptions of relationships within an organized whole was one factor leading to more cognitive interpretations of learning within psychological research (cf. Hill 1980, 121-125).

It seems that those researchers who emphasize learning of meanings and meaningful learning regard only this type of learning as conductive to real qualitative progress in thinking and in the development of self or personality. For instance,

the group of researchers at the University of Gothenburg (Marton 1981) which has stressed the description of learning from the learner's perspective (which they call phenomenography), thinks that only meaningful learning leads to a qualitatively new, deeper level in our conceptions of the reality surrounding us (to changes in some aspects or in the whole organization of our 'world picture'). They think that also within the common-sense conceptions about learning of laymen one can find the division between meaningful and nonmeaningful forms of learning. Also Rogers (1967, 38-39) thinks that experiential learning leads to involvement in a process of change, where the whole person in both his feelings and cognitive aspects is involved. Thus it is pervasive, it makes a difference in the behavior, the attitudes and perhaps the personality of the learner. Both Marton & al. and Rogers criticize (cf. Haddan, 1970, 169-174) the quantitative conception of knowledge prevailing at schools from elementary level up to even colleges and universities which leads to the transmission of stored knowledge as distinct bits of information not integrated to each other, and to a certain kind of measuring technology for assessing the amount of learning and achievement.

Although the above researchers, among many others, underline meaningful learning as the proper aim of education at schools and there is a clear increase in research towards that kind of learning as a function of the rise of the cognitive approach in psychology, the realization of that aim and the theoretical understanding of the prerequisities for meaningful learning in the school setting is far from complete. There seem to be two main causes for this state of affairs:

1. The institutional frames of schooling and the typical forms and methods of class teaching seem to guide the learning process into directions which are not beneficial to the meaningful learning of many students (e.g. Boocock 1973, and the criticism of Dewey, Rogers, Marton & al. mentioned above). The criticism arising partly from the frustrations in this respect lead in its extreme form to the so-called 'de-schooling ideology' (see, for instance Goodman 1971 and Illich 1971, cf. Husén 1974, 86-91). Though there has been much discussion about new forms of pedagogy mostly based on progressive ideas, investigations in many countries demonstrate that the reality at the level of school classes has not changed much, the 'traditional methods' are still most common (for instance, Hoetker & Ahlbrand 1969).

2. We still lack comprehensive theories about the prerequisities for meaningful learning in naturalistic school settings and how the social context of learning and the individual's frames of reference and intentios influence the experienced meaningfulness in those different situations.

These kinds of more comprehensive theories 'explaining' why individuals experience given situations in certain ways would help us also to grasp better the role of institutional factors and their interaction with individualistic orientations in producing cognitive progression or regression in school learning. In addition to more comprehensive theories we may need, according to Säljö (1982, 15), more research on qualitative aspects and on specific outcomes of learning, i.e. "what people learn and retain from learning situations". In the same way as the psychological development of individuals, the development of theories and research takes place through the dialectical relationship of differentation (specialization of research) and integration (syntheses over spesific areas). Our presentation in this context tries to serve especially the latter function of integration in the form of a framework aiming at synthesis. The lack of wider theoretical comprehension may be due to the following reasons:

- The behaviorist paradigm dominant in western countries has not paid much attention to the experiential aspects and subjective prosesses in learning which are so essential for understanding higher forms of human learning. Perhaps because of this, Johnson even in 1975 in his review about meaning in complex learning stated that research on meaningfulness is a neglected area in the educational sciences both empirically and theoretically.

- Linked with the positivist methodology was a tendency to regard learning as a basically unitary phenomenon, the basic mechanisms of which should be found in the form of general laws like in the natural sciences. This compositional perspective may have hindered the discovery of the variety of forms of learning (Säljö 1982, 21-24). In order to demonstrate the difficulty of finding general uniformity in learning Säljö presents the lack of a clear definition of learning (ibid., 11-12). According to the contextual paradigm or frame of reference, the meaning of a phenomenon is assumed to derive from the context of which it is a part.

- Most of the research concerning learning has been done in experimental conditions which means that the ecological validity of results has been questionable. On one hand, the social context which influences so essentially the process of learning at school cannot be simulated or taken into account completely in experimental conditions. The tasks to be performed or contents of learning are usually different from those typical of schools or in natural conditions outside school.

- Also, the kind of research which aims at knowledge that could be applied in school conditions and uses meaningful prose passages in experiments, often utilizes materials whose meaningfulness is defined by criteria based on the

qualities of the material itself. Their contents may be completely fictious and lack any familiarity or closeness to the learners' life experiences and the knowledge he has at hand. (Säljö 1982, 14-15).

- Much of the comparative research done in naturalist conditions and in striving for generalizations concerning performance and learning differences and their causes at group level (comparing with each other, for instance students of differing socioeconomic, ethnic or racial background, or 'deviant groups' with 'normal groups') has been methodologically 'dubious' (cf. Cole & Means 1981). Therefore there has been a tendency in this kind of research to easily arrive at unwarranted conclusions about the learning capacity of some groups and to simplified explanations based on unidirectional or linear causality. This has supported so-called deficiency models (deficits in genetic resources or in the childhood environment) (e.g. Cole & Bruner 1971). As Cole and Means (ibid.) have pointed out, one reason for simplified interpretations is due to the inability to control the role of possible 'extra' causes which is the central idea behind the logic of experimental designs and methods. This is especially true in 'retrospective' group comparisons. As Sameroff (Sarason & Doris 1979, 20-23) has demonstrated, in retrospective studies only those who have develop a later disorder are ever studied in order to find 'the cause' in their past. According to Sameroff, the recent 'prospective' studies based on follow-up desings, have produced, in many cases, results contradicting those of retrospective studies (see Olkinuora, Salonen & Lehtinen 1984, 3-4).

- Last but not least, the theories of learning and the theories of motivation for learning or action have been developed distinct from each other. We think that both the learning and motivation can be described within the same framework. Learning at schools and in naturalistic conditions in general is social action. The classic in the area of social action, sociologist Max Weber (1968) says that we should try to understand social acts by interpretations based on the subjective meanings the actors themselves give to their acts. In addition to these accounts and observations one may utilize in one's interpretations also the empirical knowledge about the average meaning a group of actors give to a certain kind of act in a certain situation. On the basis of these average meanings the researcher can try to develop theoretical ideal types which serve as a basis for generalizations in further analysis. According to Weber we should not stop only at the emphatic or rational (based on average meanings) understanding of an individual's action, but should strive for a kind of 'explaining' understanding, i.e. finding 'the real motives', why he chose a certain act to perform from the alternative acts. A. Schutz (1970), the founder of phenomenological sociology has developed the ideas of Weber further by connecting

to them some of the basic ideas of Husserl. Schutz takes as a point of departure the concept of 'life world' which is the inner phenomenological world including ourselves, other people, society and the structures of relevance which are behind of our practical interests and give meaning to our action. Schutz has also analyzed the conditions for intersubjectivity, the commonly shared meanings and taken-for-granted assumptions which arise as a function of social interaction and make possible to a certain degree interindividual communication and understanding. These are important questions also from the point of view of the educative process and social interactions in the classroom. For instance, as the empirical analyses of Cicourel et al. (1974) have demonstrated, the reciprocal correspondence of the perspectives of the teacher and pupil easily taken for granted by the teacher does not actually prevail in many cases causing disturbances in the teaching-learning process. Schutz has emphazised that research should begin by revealing and analyzing how people, in their everyday life and action, conceptualize phenomena and give accounts of the reasons for their action (so-called first-order constructs). After this, the researcher can try to describe and interpret them in the light of scientific theories, by the concepts and categories included in them (second-order constructs). This starting point resembles that of Säljö (1982, 29-33) who demands that we should start the stydy of learning from the learner's perspective, his concepts and conceptions of the contents and objects of learning and develop our concepts describing learning from that basis (to develop concepts relevant to the data, cf. the need for grouded theory, see Glaser & Strauss 1967). It seems that Lewin's idiographic approach in analyzing the individual's life space in order to be able to predict what the individual will do in a certain situation, serves, when connected with the ideas above as one possible line of developing research where attempts are made to connect motivational aspects (the structures of relevance) with cognitive processes and outcomes in studying and learning.

The Weberian tradition in striving for understanding social action and the ideas of Schutz et a.. have given impetus to the rise of 'the interpretative paradigm' in sociology which is especially evident in the so-called new sociology of education in Great Britain. The cognitive interpretation of learning and methodological ideas derived from phenomenological and existential philosophy etc. has led to reorientation in the research on learning also within psychology. This reorientation both in sociology and psychology is reflected also in the so-called constructivist approaches in educational research (cf. Magoon 1977). According to the lines of these approaches we think that the more comprehensive

theoretical framework the better understanding the nature and conditions of meaningful learning and studying and through them the background to learning difficulties could be formed. We think that it would be possible by integrating with each other ideas from theories of meaningful learning with ideas from theories of purposeful, goaldirected action in psychology (e.g. Lewin 1935, Miller, Galanter, Pribram 1960) and the social action in sociology (e.g. Schutz 1970) under a common 'umbrella concept' of meaning (and meaningfulness as a derivate). As expressed by Harré and Secord (1972, 132.): "Since the giving and grasping of meanings is the mechanism of much of the patterns of social interaction, greater precision of the delineation of meanings is what corresponds in the social sciences to the development of greater accuracy of measurement of parameters in the physical sciences". The former theoretical approach is mainly concerned with the cognitive process as a function of the interaction of the learner and his cognitive structures with the subject matter contents or tasks to be learned and what kind of meaning arise from that interaction. The latter approach deals with the other essential interaction in education, the social interaction, how the motives for action and meanings of social situations influence social interaction and how they, on the other hand, become formed as a function of this interaction. With the framework formed by this kind of synthesis we think we are more able to analyze also the interaction of cognitive, motivational, emotional and social elements in learning situations. In that way we may also understand better why the so-called normal forms of classroom interactions (see Cicourel 1973) may produce and support, in combination with personal orientations, learning difficulties in many students (connections of the individual level with the sociological system level).

'The practical reason' behind this search for theoretical synthesis is that we have in progress at the Institute of Education, University of Turku, a four-year research project financed by the Finnish Academy entitled "Interactive formation and stabilization of learning difficulties". This project which began in 1982 and will last until the end of 1985 was preceded be a small pilot study in 1981. Since we have tried to develop more versatile devices and instruments for diagnosing individuals' learning difficulties and we are now moving the emphasis of research to the development and experimentation of remedial teaching, an integrated theoretical view seemed to us to be an inevitable starting point. The function of this paper is a presentation of the basic logic behind of some of the central models included in the framework. The whole theory is presented in more detail, but in rather concentrated form in a publication: Olkinuora E., Salonen P. & Lehtinen E. (1984).

2. System of basic concepts of meaningfulness

We think that the universal tendency of human beings to try to make sense of the surrounding world and all that happens within it, i.e., to see some regularity and consistency in the world through meanings (cf. Bruner 1974, 31-32 and 177), is, on one hand, based on adaptive function and, on the other hand, serves this function both at the collective, cultural and at the individual, psychological level. By adaptation we do not mean only passive adjustment to existing conditions or learning to conform to the social norms and expectations o others. They represent some forms of adaptation and coping strategies which lead to certain kinds of consequences in societal and individual development. Many times, creative, original solutions to problems (which may become evaluated first negatively, as 'deviant' and so on) may prove to be the most functional way of adaptation in the long run. For instance, Jean Piaget (cf. Inhelder & Piaget 1958) thinks that the central force behind the intellectual development of individuals is the striving for adaptation and that intelligence is one's ability to adapt by developing one's thinking. The child adapts by constructing himself, through his active interaction with his surroundings, the qualitatively developing means of adaptation. He forms his modes of thought and action, his 'world picture', by trying to assimilate the objects of interest to the existing sensomotor or cognitive schemes and if it seems, because of the nature of the existing schemes, to be impossible, he tries to accomodate his schemes to a qualitatively higher level, in which the proper assimilation would become possible. Piaget (1972) also thinks that even the development of culturally transmitted knowledge is largely based on the 'storing' of those societal practices and cultural products which have been seen, on the basis of accumulated experiences of earlier generations, as having adaptive significance (cf. Ogbu 1981). According to this, every child is born to a world of prestructured meanings (cf. Schutz 1970), many of which he learns through the socialization process. Which of them he learns depends, on one hand on the subculture to which the family of origin of the child belongs because of the structural traits of the society which creates differing conditions of life for different segments of the population of the society and, on the other hand, on the way of life of each home and the unique experiences of each individual during his life history.

Knowledge, skills and other cultural products regarded as having societal significance (cf. Leontjew 1977) or social relevance (cf. Bruner 1974, 130) are selected for the curricula of schools for students to learn. According

to the theories of societal or cultural reproduction, the central question concerning this process of selection is, which groups of the society have most power to influence it according to their own interests and ideology in trying to legitimate the selection of certain contents as rational and inevitable, i.e. as needed in that society. Apart from who or which groups are most responsible for the selection, an important problem always remains; whether the pupils or students at school experience these contents of the curriculum and, in addition, the ways of teaching at school as being personally significant and meaningful. It is thought that this is the crux of motivation, the will of the students to try to learn things at school in a certain way. If many of the students do not internalize the objectives and contents of the curriculum, the social functions of the societal meanings do not become realized, either. This does not preclude, however, the fact that it may serve some other social function, for instance, the selective function of schools, the status quo of the ruling classes etc. i.e., those functions assumed by the reproduction theories. The personally experienced meaningfulness of studying and learning is defined here as experiencing the matters included in studying, i.e. linguistic expressions, acts and actions, as serving one's own goals and purposes (the aspect of relevance) and the mastery of processes to such an extent that one feels able by means of them to foster the acquisition of his purposes (sense of control). Thus we think that meaningful learning becomes realized in its true sense only when the two aspects specified in the definition become connected with each other: the experienced relevance arouses proper intentions for meaningful learning (motivational aspect) and the processing of information in such a way that one arrives at an understanding of the target contents or task at the level possible within the cognitive structures and schemata possessed by the learner (control of the cognitive processes needed). This does not hinder different learners from getting different results from their learning and sometimes comprehending the same task (for instance, a text to be read) at different levels, i.e., they can find some logic within the schemes at their disposal. The cases of non-learning or misunderstanding of the material can be differentiated from the kind of meaningful learning described above by the criteria that one does not feel to have found any solution or feeling of comprehension at all (lack of feelings of mastery) or that the solution does not take into account the 'objective' demands and qualities the task itself.

Though the experienced meaningfulness includes affective and cognitive elements intertwined with each other in practice, we can define analytically those aspects

of meaningfulness as follows: By affective meaningfulness we refer to experienced satisfaction linked with the contents, acts and actions included in studying, i.e., their significance based on one's needs, attitudes and emotions (for instance, seeing them as interesting, important etc.). By cognitive meaningfulness we refer to grasping the purposes of the acts and action (cf. so-called finalistic explanations of actions) in relation to one's own goals and aims and understanding the meanings of contents, linguistic expressions etc. included in studying and school attendance. The two aspects of meaningfulness specified above interact with each other. For instance, the affectively experienced relevance (cf. positive or negative valences of goals, Lewin 1935) influences how much attention one pays to certain acts or cognitive meanings in studying and learning processes. On the other hand, if one sees clearly how certain actions and acts are related to one's own aims and purposes or how certain contents relate to the cognitive structures and schemata one possesses, it elicits feelings of importance, interest etc. concerning those matters. How much the affective or cognitive aspects determine the experience of meaningfulness and how strongly those aspects integrate with each other depends, among other things, on the developmental level of individuals and the degree of differentation of their consciousness. For instance, many pupils at elementary schools cannot express or specify the cognitive meaning of their school attendance, but can, however, express evaluative statements concerning the niceness, pleasantness etc. of being and working at school. This differentation between affective and cognitive aspects of meaningfulness can be related to differentation between actually influencing versus aware or expressed motives, but it is not analogous to it.

The cognitively grasped meaningfulness can be further divided into two subtypes which also closely interact with each other and are also influenced by the affective meaningfulness through the interaction of cognitive and affective meaningfulness. One of the subtypes of cognitive meaningfulness is called here logical meaningfulness and it refers to whether the learner can relate the components and elements of a learning content or task to each other in order to create a consistent, meaningful cognitive structure and whether he can further relate this structure to other structures and schemes to find out its wholistic meaning and 'identity'. As has been said before this kind of 'true understanding' happening within the objective limits set by the nature and qualities of the task or content itself produces a sense of mastery and control, which includes, besides the cognitive processes and the achievement

of a new equilibrium of cognitive schemes after a cognitive conflict aroused by new information, also emotional elements. For instance, the analysis of the development of thinking by Piaget (Inhelder & Piaget 1958) deals with, how cognitive conflict caused by new information produces in optimal conditions cognitive progression, i.e., finding logical meaningfulness from the objects of thinking. We think that also the analyses of Ausubel (Ausubel & Robinson 1969) concerning meaningful learning deal with how to find logical meaningfulness[1)] from the object of learning by relating it to the concepts and ideas the learner has in his cognitive structures. The emphasis of his theoretizing seems to be, however, on the assimilation process. Because his theoretical system lacks the structuralism typical of Piaget, he does not deal much with the conditions which occur when thinking becomes re-organized at a new level as a result of a basic accomodation of cognitive schemes. On the other hand there seems to be also theoretical schools or directions of research, which seem to be interested in factors and conditions which produce cognitive regression, i.e., hinder the learner from finding from the tasks or contents to be learned logical meaningfulness at least at as high a level as possible in optimal conditions (for instance, stereotype responses caused by frustrations e.g., Barker, Dembo & Lewin 1941, deterioration of performance because of test anxiety, e.g., Liebert & Morris 1967, and some forms of coping behavior, e.g., Mattick & Murphy 1971, Lazarus et al. 1974).

The other subtype of cognitive meaningfulness is called psychological meaningfulness. We think that analysis of the interaction of the subtypes of cognitive meaningfulness helps us to understand also those conditions mentioned above which cause cognitive regression or lack of interest in trying to find logical meaningfulness from tasks. Psychological meaningfulness refers especially to the structures of relevance including goals-means -schemes concerning studying and learning. Psychological meaningfulness is based especially on

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1) We use the term logical meaningfulness in a more comprehensive sense than Ausubel. As used by us it refers to a kind of product of the cognitive process of relating elements or things to each other, but Ausubel uses it to refer to the nature and qualities of the material to be learned, if it has any internal structure or substantiveness so that it can be in principle related to something (see Ausubel & Robinson 1969, 54-56).

thinking in terms of preferences and probabilities. One thinks what is reasonable (meaningful) to do in a certain situation, when one relates the alternative means to one's preferences concerning goals and objectives and takes into account the anticipated probabilities of success linked to the use of each alternative. This kind of activity based on future-oriented 'in-order-to-motives' Schutz (1970) calls projecting (cf. finalistic or rational explanations of action in philosophy based on a kind of syllogism, e.g., Dray, W. 1957). According to Schutz, action is based on because -motives if one performs acts because of outer pressures or of others' expectations and wishes. Also when one explains an act one has already done, one describes it as something which had to be done (I did it, because...). The meaning of acts in a certain situation is thus determined by the phenomenological, inner world of an actor (called life space by Lewin 1935 or life world by Schutz 1970). If one does something based on because -motives then the situation has been interpreted by the actor, according to Schutz, as including so-called imposed relevance, but if the decision to act in a certain way is based more on 'free will' and thus on in-order-to -motives then the motives for action have arisen from so-called volitional or intrinsic relevance. These differentiations made by Schutz seem to be fruitful from the point of view of describing the school and learning motivation of students. If a student most of the time performs tasks at school because of imposed relevance, i.e., because of outer pressure or because the teacher demands it and so on, the intention sets for his learning activities may not favour the finding of logical meaningfulness, and if he does not find logical meaningfulness from the tasks, it is propable that his motivation to perform such tasks voluntarily on later occasions will be even weaker. On the other hand, if one finds logical meaningfulness from tasks and feels able to master the process leading to it, it leads to a strengthening of voluntary efforts to try to solve or understand such tasks later on. In the latter case, the psychological meaningfulness of action (eagerness for voluntary efforts concerning the learning of certain contents) arises from the logical meaningfulness in the way stressed by Piaget. If this kind of motivation becomes generalized at the higher levels of relevance concerning school attendance as a whole, one begins to see that the purpose of school attendance is to learn many kinds of things because of the value and intrinsic rewards of the learning itself. In this case the psychological and logical aspects of meaningfulness are inseparable from each other, they become integrated. However, in the case of so-called instrumental motivation arising not from the interest or rewards inherent in the tasks or learning itself, the activities of learning

and school achievement serve some outer goal or purpose (for instance, satisfying others' expectations, getting a good profession later or only getting social contacts with others) which has gained preference within one's structures of relevance and in this case the aspects of psychological and logical meaningfulness become differentiated from each other. When it is a question of learning difficulties, the psychological and logical meaningfulness do not only become differentiated from each other, but may even disintegrate so that what one sees as meaningful to do in the situation (for instance, because of experienced ego threat or fear of failure, cf. coping mechanisms) is in contradiction with the possibilities for finding logical meaningfulness from the intellectual task. Thus behavior that look random (for instance, pupil tries to guess the right answer) or mindless for the observer or teacher is, however, meaningful for the actor who is trying to cope with the threatening aspect of the situation. We will elaborate on these aspects in section 4. when introducing 'the theoretical ideal types of orientation of a student in a learning situation based on certain kinds of relevance'.

In order to make a sort of schematic summary of the discussion above and to see more clearly the structure of the system of concepts developed for describing meaningfulness the following figure is presented:

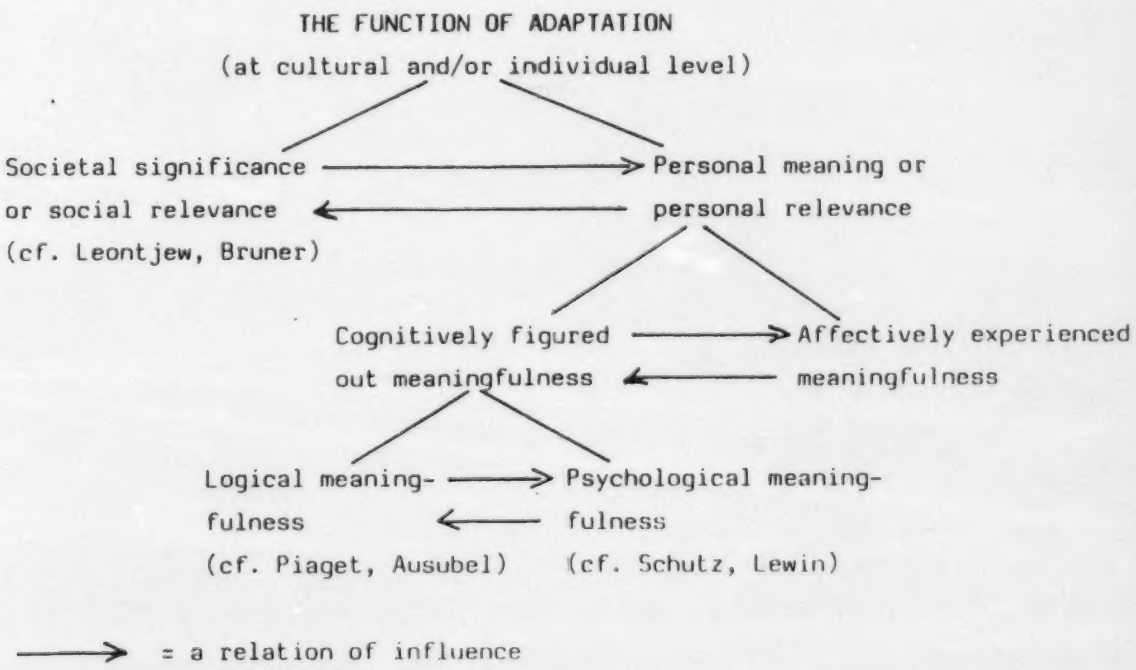

Figure 1. The system of concepts describing meaningfulness

3. Hierarchy of structures of relevance and interaction between levels and dimensions of relevance

Behind the psychological meaningfulness of studying and learning there are structures of relevance. They usually form hierarchies within which there are structures linked with different levels of one's phenomenological world. These structural levels interact with each other and the situation may activate structures of relevance primarily at a certain level. This hierarchial organization of relevances concerning learning and studying can be seen in the following figure:

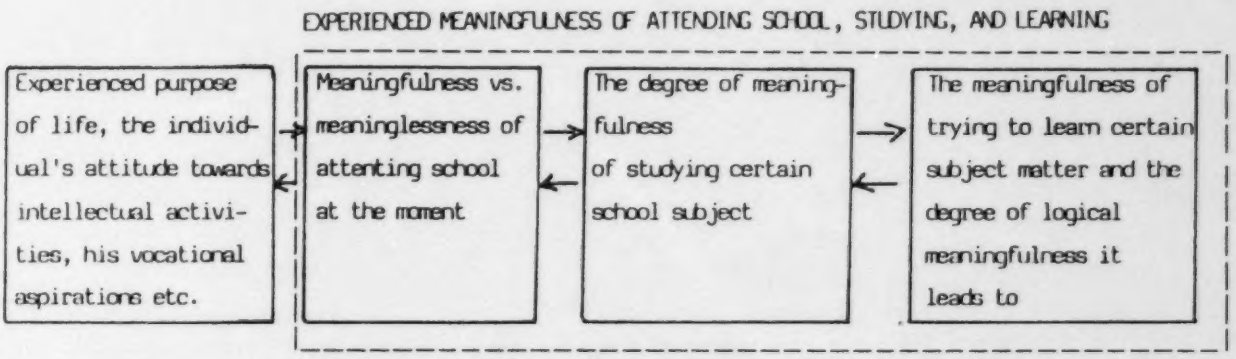
EXPERIENCED MEANINGFULNESS OF ATTENDING SCHOOL, STUDYING, AND LEARNING
Experienced purpose of life, the individual's attitude towards intellectual activities, his vocational aspirations etc.
Meaningfulness vs. meaninglessness of attenting school at the moment
The degree of meaningfulness of studying certain school subject
The meaningfulness of trying to learn certain subject matter and the degree of logical meaningfulness it leads to

Figure 2. The levels of structures of relevance

Thus the experienced purposefulness of life itself, the individual's level of vocational aspirations and career goals, his attitudes towards intellectual activities in general etc. may affect the way he experiences the purpose and relevance of school attendance at the time. This may, in turn, influence his experiences of the meaningfulness of studying different subjects which further influences whether it makes sense to try to learn certain matters or to perform a task in the here and now situations. These situation specific 'happenings' and whether he experiences a sense of mastery and a sense of success in them influence, as a cumulative process, the attitude towards a particular school subject. Whether he has usually had negative or positive experiences in most of the subjects may become reflected further in the attitude towards school and school attendance. This attitude may have some consequences on his conception of learning (for instance, interesting,

challenging or boring, difficult etc.), the way he uses his leisure time and on the level of his career goals. However, the experienced relevance at one level does not always influence the meaningfulness at another lever in a very direct way. Each of the levels has a certain degree of functional autonomy (for instance, one thinks that he does not like math but likes to go to school in general, but another may think just the contrary).

Besides this vertical organization of the structures of relevances (levels of meaningfulness), there are also 'horizontal' dimensions and zones of relevance structures. One may, for instance, contrast the relevance of studying and school learning with the relevance of other domains of activity as the primary channels of realizing one's life goals. We can distinguish between two central dimensions of relevance: social and intellectual, which are important from the point of view of the formation of these structures and of the quality of learning motivation. The structures of relevance are formed in interactive processes during an individual's life history. In the social interaction with so-called significant others one learns the cultural meanings and values of schooling and learning in the society in general, but, in addition, one learns by one's own unique experiences, how learning relates to social rewards, evaluations, pressures and models in one's own immediate environment. One may learn, for instance, that learning per se is important and/or rewarding or that it is important because of its social consequences (instrumental value), or that it is threatening or disgusting because of other kinds of social consequences leading to experiences of ego threat or other negative feelings.

We can summarize the role of the above dimensions of relevance and the interaction between them and within them between situation-bound and more permanent sources of relevance by means of the following figure:

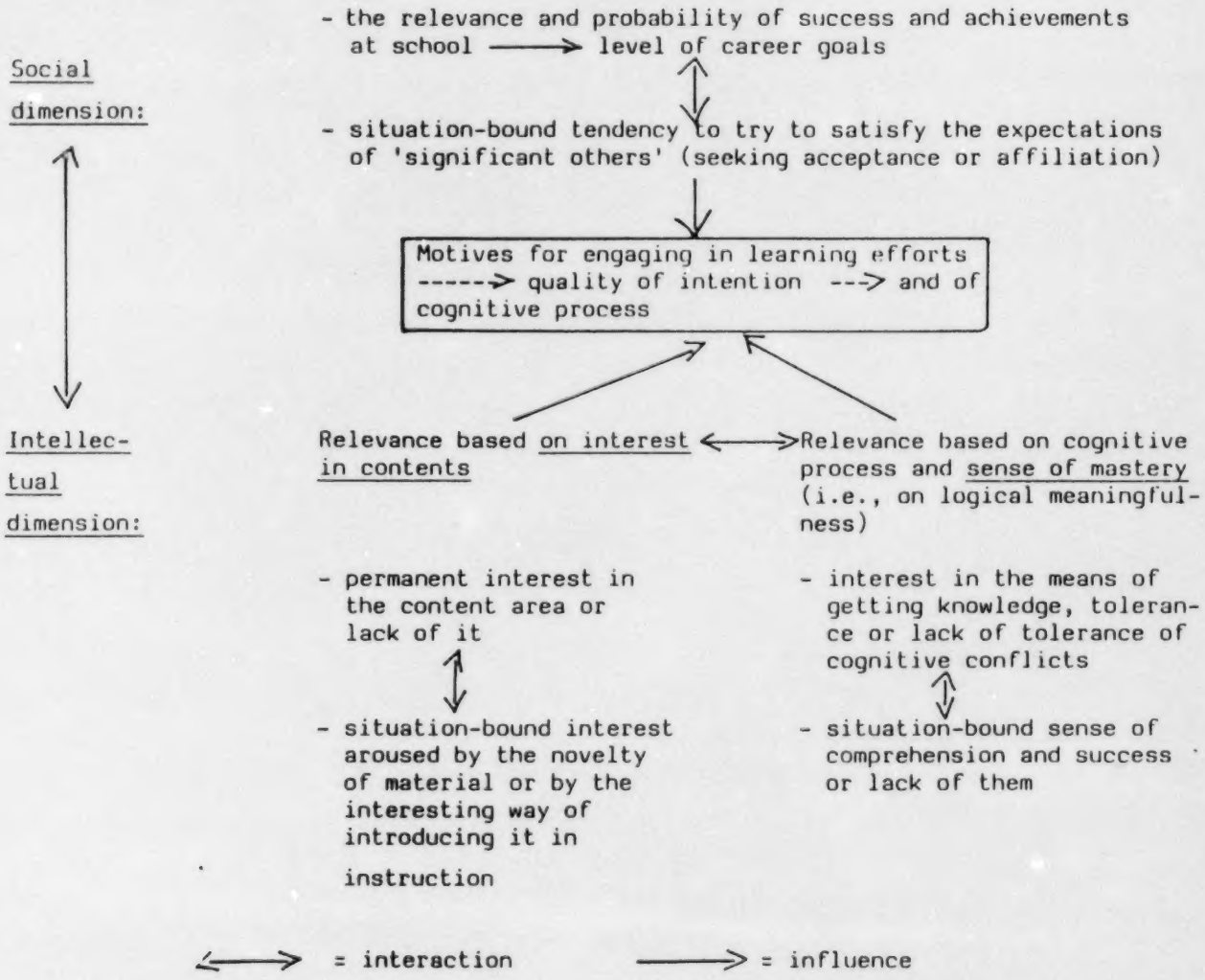
- the relevance and probability of success and achievements at school ⟶ level of career goals
Social dimension:
- situation-bound tendency to try to satisfy the expectations of 'significant others' (seeking acceptance or affiliation)
Motives for engaging in learning efforts ------> quality of intention --> and of cognitive process
Intellec-tual dimension:
Relevance based on interest in contents ⟷ Relevance based on cognitive process and sense of mastery (i.e., on logical meaningfulness)
- permanent interest in the content area or lack of it
- interest in the means of getting knowledge, tolerance or lack of tolerance of cognitive conflicts
- situation-bound interest aroused by the novelty of material or by the interesting way of introducing it in instruction
- situation-bound sense of comprehension and success or lack of them
⟷ = interaction
⟶ = influence

Figure 3. The interaction of social and intellectual dimension of relevance and of situation-bound versus more permanent elements within them in evoking motives for learning

4. Types of orientation in the learning situation

We think that it is possible to form, on the basis of the quality of preferences determined by the structures of relevance and of the sense of control concerning the intellectual and social dimensions of studying and learning, a consistent typology (theoretically 'purified' ideal types, cf. Weber) of orientations of a student becoming actualized in a learning situation. In many cases, the actual orientation of students is a mixture of theoretically described orientations. It is also important to note that these orientations may be either situation specific so that the orientation of an individual varies from one situation to another or become consistent or generalized over situations concerning a certain school subject or school work in general.

We call the type of orientation regarded as optimal from the point of view of possibilities for finding logical meaningfulness and of intrinsic motivation, task-orientation. We think further that it also best serves the kind of adaptation needed in modern technological societies with its continously changing conditions and competencies needed in vocational life. A student orienting in this way feels a sense of control concerning the intellectual dimension of school life and is therefore success-oriented. He assumes a self-governed interpretative relationship toward the task. He plans his action in a learning situation independently but is at the same time guided in his action by the 'objective' requirements and qualities of the task. He takes into account simultaneously the assumed perspective of the teacher to the task and utilizes the feed-back from the teacher and the outcomes of his own actions in finding suitable learning strategies. Of course, this type of orientation is not always enough for successful solutions or for correct understanding, because they depend,in addition, on the possession of certain prior knowledge and appropriate schemes. The obstacles and failures are not, however, interpreted as impasse situations without future perspective but as challenges and controllable through increased or qualitatively changed efforts. The emotions arising in a task orientated subject are not ego-related but are connected with schemata directed toward the task elements. Therefore, cognitive conflicts are not experienced as threatening but as motivating renewed efforts. The student actually is sensitive to cognitive conflicts or dissonance. However, his tolerance of ambiquity is high. This is why cognitive conflicts are useful in motivating students orientated toward the task. The social outcomes of intellectual activities are of second-order importance compared with the interest in the

task and in the process of learning itself. Therefore one need not worry about them nor be sensitive to outer social pressures.

The second type is called socially dependent orientation. One is concerned primarily with the social outcomes of learning and studying and feels a sense of control in that dimension, i.e., expects to receive social rewards and satisfactions, which keep up and reinforce one's motivation for learning efforts. There may be two subtypes within this orientation. One may be confident about social acceptance even if one fails in intellectual performances, and still want to try one's best in order to satisfy 'significant other's' wishes. The other may feel more that his self worth is 'measured' more by his intellectual performances, but if he feels able to control his success in intellectual performances he can, through it, also control the receiving of social rewards and keeping up a positive self image, which are of primary interest for him. The latter case is more prone to outer pressures because of a less secure position in the 'eyes of others' according to his own interpretation. If he begins to lose control of intellectual performances and also of gaining social acceptance or prestige, he transforms his orientation to that of ego-related (or ego-defensive) orientation, our third type. The pupils at the lower stage of the comprehensive school (primary school level) seem to be concerned about the rather immediate social outcomes (teachers' praise, a good score from an exam etc.), whereas older students seem to emphasize so-called deferred gratification, longterm rewards linked with career goals (good grades and marks, possibilities to continue school attendance at higher levels or in highly selective schooling etc.).

The emphasis within the structures of relevance linked with the ego-related or ego-defensive orientation is on self-worth and on the risk of failure in intellectual performances. Thus one feels unable to control either the outcomes or one's intellectual activities or the satisfaction of one's social needs. Especially in performance situations one is in a way over-motivated, but this type of motivation leads to both low sensitivity regarding cognitive conflicts in the interaction with the task and/or low tolerance of conflict. One feels strong outer pressures because of worries about possible negative outcomes (cf. the results concerning test anxiety, which seem to demonstrate that the cognitive component of the anxiety, worrying, is more conductive to lowered performance level than the emotional aspect, Heckhausen 1982, 247) and this causes cognitive regression. It is also probable that because of this

orientation the original objective of trying to solve the intellectual problem becomes surrogated by a new objective, how to get away from the situation 'without losing too much face', i.e., trying to avoid the ego threat experienced in the situation. This may lead to different kinds of coping strategies to avoid failure (Covington & Beery 1976, 43-62). If one meets recurrent failures one may try to shelter oneself from strong pressures by different kinds of defense mechanisms. One may, for instance, begin to deny the value of school attendance and school achievements (a kind of reaction formation) and seek meaningfulness and compensatory satisfaction from other domains of life (such as sports, music or even illegal activities as in juvenile delinquency). This kind of orientation, in which the sense of control within school of neither an intellectual nor a social dimension means anything any more we call the orientation of non-commitment. It seems, on the basis of our empirical observations and results, that it is very rare among pupils at the lower stage of the comprehensive school, but more common at the higher stage of the comprehensive school. Typical of the students who have this orientation generalized to the whole of school work is that, when interviewed, they answer the question "Why do you go to school?" with replies such as: because it is compulsory, because I get good food to eat there etc.! The low level of achievement does not depend in this case on cognitive regression as in the case of ego-related orientation and to a lesser degree in socially dependent orientation, but more on lack of interest in any goal-directed efforts in the school setting.

To illustrate the central points of the above speculations a summary in the form of figure 4. is presented on the following page.

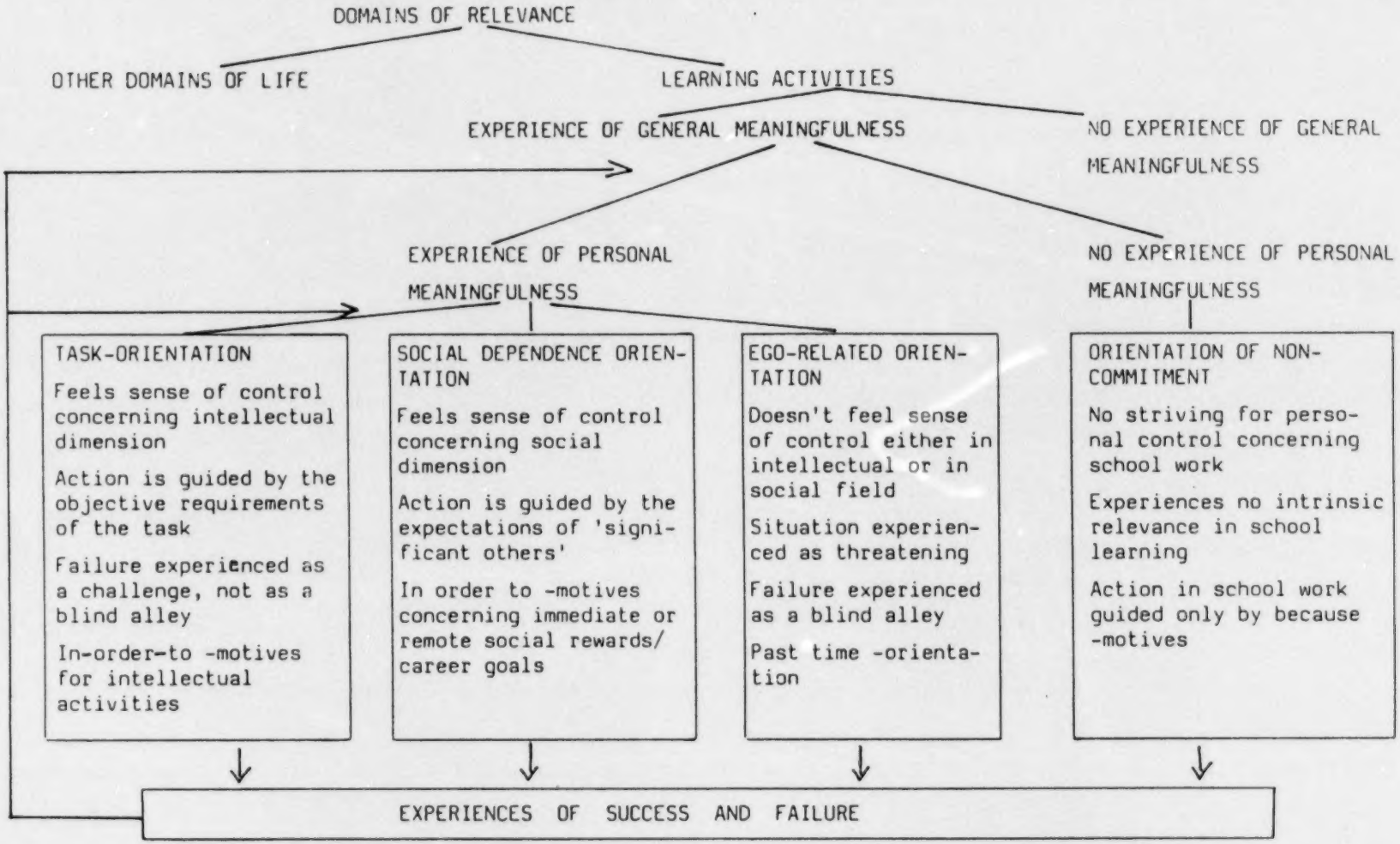
DOMAINS OF RELEVANCE
OTHER DOMAINS OF LIFE
LEARNING ACTIVITIES
EXPERIENCE OF GENERAL MEANINGFULNESS
NO EXPERIENCE OF GENERAL MEANINGFULNESS
EXPERIENCE OF PERSONAL MEANINGFULNESS
NO EXPERIENCE OF PERSONAL MEANINGFULNESS
TASK-ORIENTATION
Feels sense of control concerning intellectual dimension
Action is guided by the objective requirements of the task
Failure experienced as a challenge, not as a blind alley
In-order-to -motives for intellectual activities
SOCIAL DEPENDENCE ORIENTATION
Feels sense of control concerning social dimension
Action is guided by the expectations of 'significant others'
In order to -motives concerning immediate or remote social rewards/ career goals
EGO-RELATED ORIENTATION
Doesn't feel sense of control either in intellectual or in social field
Situation experienced as threatening
Failure experienced as a blind alley
Past time -orientation
ORIENTATION OF NON-COMMITMENT
No striving for personal control concerning school work
Experiences no intrinsic relevance in school learning
Action in school work guided only by because -motives
EXPERIENCES OF SUCCESS AND FAILURE

Figure 4. Types of orientation based on quality of sense of control and the kind of relevance experienced

5. Cyclical formation of orientations and learning difficulties

As was mentioned earlier, different types of orientation may be elicited by the situation specific conditions, i.e., the context influences how an individual interprets the social meaning of the situation an this further affects the learning process. On the other hand, orientations may become generalized more or less over certain situations and behind this generalization and stabilization of a given orientation may be a kind of self-reinforcing cyclical process in which the cognitive, motivational and emotional aspects of experienced relevance and control (or lack of them) become related to each other in a consistent way. These aspects and processes have been studied from different perspectives. It seems useful to relate them to the phases of the problem-solving process or of the learning cycle. Such a unified model may be of help in understanding the cyclical nature of coping processes and the interaction of cognition and emotion during regressive and progressive development (see also Lazarus & Launier 1978). As a point of departure we take an imaginary situation where a pupil confronts new material or information which he should try to learn. We divide this situation into three central process phases: the phase of orientating to the new task on the basis of which one engages more or less intensively in learning activities in the second phase, i.e., to process the task specific information, which leads further to some kind of ~~process~~ outcome and to the assessment of it and its 'goodness' (the third phase). Within each of the phases we try to outline, on the basis of the theoretical and empirical literature, the critical components and points from the perspective of effective learning. We think that what happens during the preceding phases of the cycle influences the process during the following phases through cognitive and affective channels. When we organize our description in this way we can see that most schools of thought dealing with motivation or learning concentrate in their theories mainly on one of these phases. Some theorists emphasize the significance of the orientation at the beginning of the cycle and the kind of intention and interest it leads to. For instance, deCharms (1976) thinks that from the point of view of the quality of motivation and persistent effort it is important that one feels onself to be the originator of one's objectives and action ('origin' -type of pupil). The importance of self-determination and voluntary interest for the subsequent action is also stressed by Schutz (1970, 52 'imposed versus intrinsic relevance') and by Leontjew (1977, the arousal of personal meaning). Marton & Svensson (1982, 14-15) have stressed, as an essential factor guiding an individual's

approach to learning, the conception of learning he has formed from his earlier experiences. Besides this, and the quality of interest, also one's academic self-concept as related to the assessed difficulty level of the task influences one's approach in the situation. We think that the kind of intention arising as a function of the above factors affects the deepness of information processing in the subsequent phases. The intention of meaningful learning and engagement in intensive efforts are not, however, sufficient conditions for high level learning in every case. If one does not know how one should process information in order to obtain effective solutions to the cognitive conflict aroused by a new task, good intentions are not enough. There is a rapidly growing literature concerning the ways of information processing under concepts like learning strategies, cognitive style, cognitive controls etc. There are also therapies for learning difficulties based on the psychology of information processing (e.g., Santostefano 1978; Letteri 1982). It is logical, of course, that the above-mentioned strategies and styles determine the product of the process and its 'rightness'. The successfulness of the product per se, defined by some outer criteria (feedback from a teacher, a score in a standardized achievement test etc.) does not, however, alone predict its motivational consequences. An individual has his internal criteria for success and also important is his interpretation of the possible causes of success/failure. The theories of causal attributions assume that, depending on those interpretations, failure may sometimes lead to increased efforts and to trying new strategies in later situations seen as analogous to the situation which lead to failure (see e.g., Dweck & Goetz 1978). These theories (Weiner 1979; Kelley 1976) assume also that situation-specific interpretations may gradually be transformed into generalized optimism or pessimism in the form of academic self-concept in the same types of situations or in that performance area.

A summary of the main points of the above analysis is presented in figure 5. below. It is thought that the common methods of pupil assessment at school tend to intensify the differences between pupils' learning motivation and the growth of these differences during the process of schooling (cf. Nicholls 1979). Thus the synthesis tries to demonstrate how the cyclical processes of learning situations produce cumulative experiences which lead to the development of individuals' motives, conceptions and behavioral tendencies in different directions and how they cause, in negative cases, deep and stable learning difficulties. We should be able to help those pupils before their difficulties become too strongly anchored in the personality, before they lose hope and turn their back on school work and its objectives.

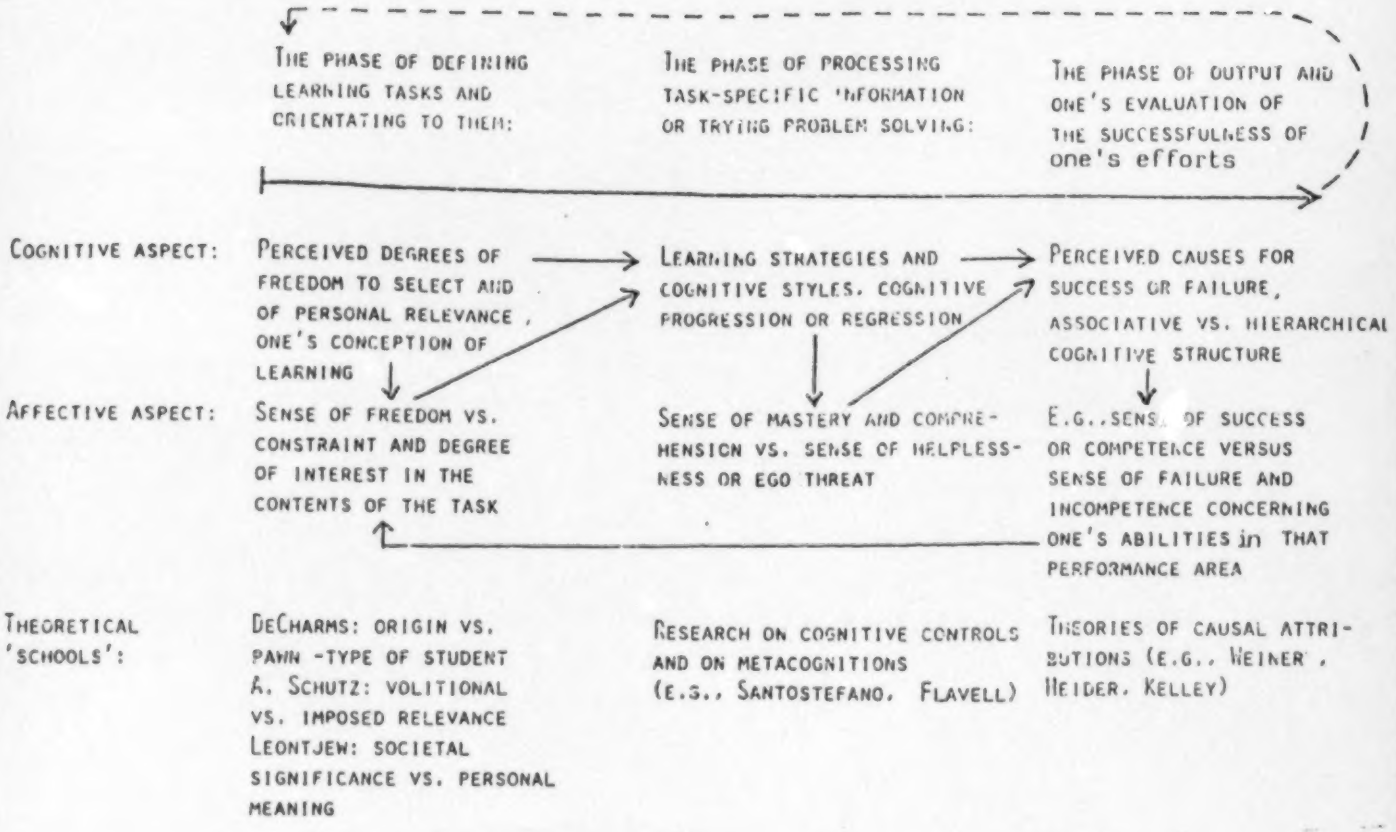
The phase of defining learning tasks and orientating to them:
The phase of processing task-specific information or trying problem solving:
The phase of output and one's evaluation of the successfulness of one's efforts
Cognitive aspect:
Perceived degrees of freedom to select and of personal relevance, one's conception of learning
Learning strategies and cognitive styles. Cognitive progression or regression
Perceived causes for success or failure, associative vs. hierarchical cognitive structure
Affective aspect:
Sense of freedom vs. constraint and degree of interest in the contents of the task
Sense of mastery and comprehension vs. sense of helplessness or ego threat
E.g., sense of success or competence versus sense of failure and incompetence concerning one's abilities in that performance area
Theoretical 'schools':
DeCharms: origin vs. pawn -type of student
A. Schutz: volitional vs. imposed relevance
Leontjew: societal significance vs. personal meaning
Research on cognitive controls and on metacognitions (e.g., Santostefano, Flavell)
Theories of causal attributions (e.g., Weiner, Heider, Kelley)

Figure 5. Prerequisities for experiencing sense of control and for finding logical meaningfulness in different phases of a learning cycle

If we try to help such pupils by the methods of individualized remedial teaching or therapy we should bring together the ideas and methods of different schools of though. For instance, by the kind of motivation therapy developed by deCharms (ibid.) we try to make a pupil set himself realistic goals and aims, by the therapy of cognitive controls (Santostefano 1978; Letteri 1982) we can try to teach him how to learn to learn and process information adequately and by the therapy of causal attributions (e.g., Dweck & Goetz 1978) we try to help him make such interpretations concerning the possible outcomes of his actions that he does not become depressed by failures but preserves a sense of control concerning those outcomes and thus maintains his positive self concept. By means of this kind of more comprehensive therapy and also by developing ordinary teaching in school classes in this direction we may further task orientation and cognitive progression. Thus, by

developing in the learner an adequate sense of control based on differentiated metacognitions, we help him to find logical meaningfulness from learning tasks and this helps him also to see the personal relevance of school work, especially if we can demonstrate the relation of the knowledge learned in this way to reality and life outside school. This seems to presuppose that the methods of school work are developed in such a way that students of differing backgrounds can utilize the competencies they have developed outside school produced by the way of life of a certain subculture (cf. Ogbu 1981). This might also help to eliminate the paradoxical state of affairs one can see to a certain degree nowadays in many countries: students regarded as clever and task-oriented when performing typical tasks in the school setting may behave in a very helpless way when confronted with so-called practical problems in every-day life outside school, and on the contrary, many students who feel helpless and lack control in school work may behave in a controlled, mastery-oriented way in demanding situations outside the school walls and solve complex problems there.

The integrated theoretical framework introduced in this paper has developed as a result of the interaction of original theoretical ideas and the empirical observations from our research project concerning learning difficulties. We have not ~~been able to~~ present-ed a survey of those empirical results obtained thus far in this context. They will be reported elsewhere later on.

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References

Ausubel, D.P. & Robinson, F.G. (1969) School Learning. An Introduction to Educational Psychology. New York: Holt, Rinehart & Winston.

Barker, R., Dembo, T. & Lewin, K. (1941) Frustration and regression: An experiment with young children. University of Iowa Studies in Child Welfare, 18, No. 1.

Boocock, S. (1973) The School as a Social Environment for Learning: Social Organization and Micro-social Process in Education. Sociology of Education, Vol. 46, No. 1, 15-50.

Bruner, J. (1974) The relevance of education. Bungay, Suffolk: Penguin Education.

deCharms, R. (1976) Enhancing motivation. Change in the classroom. New York: Irvington Publishers.

Cicourel, A. (1973) Cognitive sociology: Language and meaning in social interaction. Middlesex: Penguin.

Cicourel, A., Jennings, K., Jennings, S., Leiter, K., Mackay, F , Mehan, H. & Roth, D. (1974) Language use and school performance. New York: Academic Press.

Cole, M. & Bruner, J. (1971) Cultural differences and inferences about psychological processes. American Psychologist, 26, 867-876.

Cole, M. & Means, B. (1981) Comparative studies of how people think. An introduction. Cambridge, Mass: Harvard University Press.

Covington, M.V., Beery, R. G. (1976) Self-Worth and School Learning. New York: Holt, Rinehart and Winston.

Dewey, J. (1915) The School and Society. Chicago: The University of Chicago Press (2. ed.).

Dweck, C. & Goetz, T. (1978) Attributions and learned helplessness. In: J. Harvey, W. Ickes & R. Kidd (eds.) New directions in attribution research. Vol. 2. Hillsdale, N.J.: Lawrence Erlbaum.

Dray, W. (1957) Laws and Explanation in History. Oxford: Oxford University Press.

Glaser, B.G. & Strauss, A.L. (1967) The discovery of grounded theory. Strategies for qualitative research. New York: Aldine.

Goodman, P. (1971) Freedom and learning: the need for choice. In Hooper, R. (ed.) The curriculum: Context, Design and Development. Edinbourgh: Oliver & Boyd, 107-113.

Haddan, E.E. (1970) Evolving Instruction. New York: The Macmillan Co.

Harré, R. & Secord, P.F. (1972) The explanation of social behavior. Oxford: Blackwell.

Heckhausen, H. (1982) Task-irrelevant cognitions during an exam. In: H. Krohne & L. Laux (eds.) Achievement, stress, and anxiety. Washington, D. C.: Hemisphere.

Hill, W. F. (1980) Learning. A survey of psychological interpretations. Bungay, Suffolk: Methuen.

Hoetker, J. & Ahlbrand, W.P. (1969) The Persistence of the Recitation. American Educational Research Journal, Vol. 2, 145-167.

Husen, T,. (1974) The Learning Society. London: Methuen & Co.

Illich, I. (1971) The alternative to schooling. New York Saturday Review 19 th, June.

Inhelder, B. & Piaget, J. (1958) The growth of logical thinking from childhood to adolescence. New York: Basic Books.

Johnson, R. . (1975) Meaning in Complex Learning. Review of Educational Research, Vol. 45, No. 3, 425-459.

Kelley, H. (1967) Attribution theory in social psychology. In: D. Levine (Ed.) Nebraska Symposium on Motivation. Lincoln: University of Nebraska Press.

Lazarus, R., Averill, J. & Opton, E. (1974) The psychology of coping: Issues of research and assessment. In: G. Coelho, D. Hamburg & J. Adams (Eds.) Coping and adaptation. New York: Basic Books.

Lazarus, R. & Launier, R. (1978) Stress-related transactions between person and environment. In: L. Pervin & M. Lewis (Eds.) Perspectives in interactional psychology. New York: Plenum.

Leontjew, A.N. (1977) Activity, consciousness, and personality. (2nd ed.). Moscow.

Letteri, C. (1982) Cognitive profile: Relationship to achievement and development. Paper presented at the 8th international congress of W.A.E.R. Helsinki.

Lewin, K. (1935) Dynamic theory of personality (trans. by D. K. Adams and K. E. Zener) New York: McGraw-Hill.

Liebert, R. & Morris, L. (1967) Cognitive and emotional components of test anxiety: A distinction and some initial data. Psychological Reports, 20, 975-978.

Magoon, A.J. (1977) Constructivist approaches in educational research. Review of Educational Research, Vol. 47, No. 4, 651-693.

Marton, F. (1981) Phenomenography - Describing conceptions of the world around us. Instructional Science, Vol. 10, 177-200.

Marton, F. & Svensson, L. (1982) Towards a phenomenography of learning. II: A relational view of study skill. Department of Education. University of Göteborg. 1982:07.

Mattick, I. & Murphy, L. (1971) Cognitive disturbances in young children. In: J. Hellmuth (Ed.) Cognitive studies. Vol. 2: Deficits in cognition. New York: Brunner/Mazel.

Miller, C. A., Galanter, E. & Pribram, K. H. (1960) Plans and the Structure of Behavior. New York: Holt, Rinehart & Winston.

Nicholls, J. (1979) Quality and equality in intellectual development. The role of motivation in education. American Psychologist, 34, 1071-1084.

Ogbu, J. (1981) Origins of human competence: A cultural-ecological perspective. Child Development, 52, 413-429.

Olkinuora, E., Salonen, P. & Lehtinen, E. (1984) Toward an Interactionist Theory of Cognitive Dysfunctions. Faculty of Education, Research Report B:10. Turku: University of Turku. (Finland).

Rogers, C. R. (1957) The necessary and Sufficient Conditions of Therapeutic Personality Change. Journal of consulting Psychology. Vol. 21, April, 95-103.

Rogers, C. R. (1967) (ed.) The therapeutic relationship and its impact: A study of psychoterapy with schitsophrenics. Madison: University of Wisconsin Press.

Santostefano, S. (1978) A biodevelopmental approach to clinical child psychology. Cognitive controls and cognitive control therapy. New York: Willey.

Sarason, S. & Doris, J. (1979) Educational handicap, public policy, and social history: A broadened perspective on mental retardation. New York: Free Press.

Schutz, A. (1979) On phenomenology and social relations. Chicago: University of Chicago Press.

Säljö, R. (1982) Learning and Understanding. A Study of Differences in Constructing Meaning from a Text. Göteborg Studies in Educational Sciences 41. Acta Universitatis Gothoburgensis.

Weber, M. (1968) Basic Concepts in Sociology. London: Peter Owen.

Weiner, B. (1979) A theory of motivation for some classroom experiences. Journal of Educational Psychology, 71, 3-25.

Wertheimer, M. (1945) Productive thinking. New York: Harper & Row.